Does Tobacco-smoking Injure the Eyesight?
See page 60.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

DR. YONGER, of San Francisco, claims to be the first dentist in America to perform successfully the experiment of implanting teeth. This process is not to be confounded with transplanting teeth, which has been practised by dentists for many years. In the latter operation, a tooth freshly extracted is inserted in a socket from which one has just been drawn. The parts unite, circulation between the jaw and the tooth is established, and the latter actually takes the place of its predecessor.

✣ ✣ ✣

IN Dr. Yonger's experiment, the tooth to be replaced has long been extracted, and the socket filled up with bony substance. He drills into the jaw, gouges out a new socket, and then, taking a tooth that has long been extracted, cleans it thoroughly, soaks it in bichloride of mercury, and inserts it in the socket just formed. This new tooth in due time becomes firmly anchored, and as serviceable as the original one before it became decayed. Dr. Yonger holds that the tooth is held in its place by the soft tissues surrounding it, and that the artificial socket has nothing to do with anchoring it.

✣ ✣ ✣

THE experiment described above was performed by Dr. G. M. Curtis, of Syracuse, who afterwards extracted the implanted tooth, and sent it to Dr. W. M. Gray, the microscopist of the surgeon-general's office, who has made a very careful examination of it. His experiments prove beyond question that the tooth so implanted had revived, that circulation was established between the socket and the implanted tooth, and that the socket does take an active part in anchoring the tooth. A tooth so implanted is much more firmly anchored in the jaw than one of the originals, and, in the case referred to, the tooth was held so firmly that Dr. Curtis broke it in extracting it. Dr. Gray does not doubt that the soft tissues do take an active part in the operation, but he has proved his propositions in regard to the bone and the tooth beyond all question.

✣ ✣ ✣

The *Lancet*, appropriately with the advent of warmer weather, gives a discourse on the value of cold bathing. My contemporary says that the use of cold water for bathing purposes is a time-honoured institution in many, if not in all, countries. Though necessarily limited in its application by considerations of convenience, it is probably nowhere more highly appreciated than in the British Isles. Respecting its value as a bracing general stimulant in suitable cases there can be no question, and the difference in this particular between its influence and the depressing effect of frequently repeated warm bathing is obviously a point in its favour. The sharp and transient shock of cold is doubly beneficial. It clearly acts, not only as a stimulus of the circulation, constricting for the moment the surface bloodvessels, and thus provoking their after-dilatation, but it is also, by the same process, an acclimatiser.

✣ ✣ ✣

THE risk of chill, it continues, from sudden changes of wind and weather is manifestly lessened in the case of those whose vaso-motor system (or that regulating the bloodvessels) has been trained to adapt itself to such movements by the discipline described above. It is true that constitution, state of health for the time being, and age cannot be left out of account; but we shall not err in saying that, given a fair degree of vascular tone, unimpaired by any serious weakness of the heart-muscle, a

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frequent cold bath rapidly gone through is a tonic as natural as it is beneficial. In beginning the practice it is wisest to choose the summer season, and it may then be continued daily or on alternate days throughout the winter.

✣ ✣ ✣

A correspondent who has been in the habit of thus refreshing himself during the past ten years informs us that, though neither young nor robust (his age is fifty), he has enjoyed a dip every other morning even in the depth of severe winters. He experienced, apparently, equal benefit whether he selected, for a given season, his bath, the sea, or a fresh-water lake as the scene of his ablutions. He is naturally a strong believer in cold bathing. It is not necessary, adds my contemporary, even for all *bonâ-fide* bathers to follow his plan in detail, but his general rules are worth observing. These are—to take a rapid dip, say one which occupies three or four minutes, to bathe on alternate days, to be well warm with exercise before immersion, and to keep up the glow after it. The directions are excellent. In order to follow them out with benefit, a robust physique is not necessary, at all events for bathers in-doors; but at least an average degree of vascular tone is.

✣ ✣ ✣

I should like to add to these excellent and wise remarks that it is both unnecessary and unwise to wet the head in the morning bath. Baldness is a frequent result of this practice, and headache is a common symptom in those who wet the head. I scarcely, however, discern the wisdom of the advice as regards bathing on alternate days. For many years I have enjoyed my cold bath each morning, with, I am certain, great personal gain in a marked decrease in liability to colds. The long and the short of cold bathing is, that the bather should start with a fair measure of good health, and with a freedom from lung troubles; that he should not stay too long in the bath, but rather err on the side of quickness in his sponging operations; and that his subsequent towelling and dressing be energetically performed. I would say, finally, that outside-bathing is, in the vast majority of cases, dangerous or risky for ordinary persons; while the "morning tub" in the house is both healthful and enjoyable.

✣ ✣ ✣

I observe that the *Catholic Press*, in recently describing the efforts of Roman Catholic sisterhoods in Jerusalem for the alleviation of the sufferings of lepers, says:—We must not close these remarks about the Christian missions in Palestine without saying a word in reference to the new drug which has been regarded as a real specific for the loathsome and much-dreaded disease of leprosy. It is claimed by Monsignor Poyet that the noang-nan—so the medicine is named—has produced the most wonderful cures of this malady, not only in Palestine, but also in Trinidad, in the Antilles, in Pondicherry, and in very many other places where, unfortunately, leprosy has obtained a footing. Monsignor Poyet challenges doctors all the world over to examine and test the drug, and boldly asserts that it has proved efficacious not merely in the cure of the disease mentioned, but also of cancer and of hydrophobia, even when unmistakably manifested and fully developed. We have not heard whether M. Pasteur has been informed of this new remedy for his pet disease; but we understand that some of our foreign missioners in the East are soon to publish startling statistics on the subject.

Original Essays

"Life is not to live, but to be well."—*Martial.*

SOMETHING ABOUT OATMEAL.

By Dr. A. J. H. Crespi, Wimborne.

(Late Editor of the "Sanitary Review.")

A couple of months ago a friend wrote expressing concern that the value of oatmeal as a cheap and nutritious food, and an admirable substitute for meat, was not better understood by the working classes. The same remark has several times been made in my hearing by friends who were anxious to increase the available food supplies of this country. I question the utility of trying to teach the working classes by precept, though I believe much can be done by example. Do you think you would listen patiently were someone to come to you and say, "My good fellow I am a gentleman, and, of course, have all the luxuries and dainties of the season, and never touch anything cheap and common; but you are only a clerk or a labourer—you can eat what will not do for me. I should not eat them, but you might have porridge for breakfast and tea, and a dish of boiled nettles for dinner, things quite good enough for you!" Of course you would not. You would feel insulted, and very naturally. It is waste of time for benevolent people to play the part of signposts—to point the way to others, but not to go themselves. Let us set a good example by all means, but let us not talk of cheap and wholesome foods which are good enough for the working classes. Believe me, "that sort of people" wont listen to such advice in these times, and no wonder either.

In matters of diet, as in other things, labouring men imitate their social superiors with remarkable faithfulness. In our state of society, the poorer and humbler a class the less likely will it be to tolerate being branded as inferior and poverty-stricken. Country clergymen and powerful landowners could do more in their several districts to introduce a more rational diet than all the writers on dietetics put together. We English, from what cause I know not, are enamoured of the pleasures of the table, but we do not excel in our culinary arrangements. More food is wasted, more carelessness and incompetence shown in preparing and arranging our diet, than would maintain an army or pay the interest of the National Debt. It is a solemn truth that every time a badly cooked joint, or a doughy, sodden loaf, or a dish of underdone potatoes comes to table, small sums of money are wasted, ranging from a penny to a dozen shillings, and there is no advantage of any kind to any one.

What a strange liking we have for banquets. We cannot celebrate the anniversary of an unsuccessful and sanguinary cavalry charge without spending money on a useless "gorge." We cannot invite half a dozen friends unless we prepare a feast. What necessity is there for this luxurious state of things, more especially at the evening parties of the middle classes, for, at the splendid receptions of the aristocracy, the same prominence is not given to the pleasures of the table? Would it not be infinitely preferable to invite a few friends for three or four hours, and hand them a piece of cake or a biscuit or a glass of wine or milk, and nothing else—that is if a late supper is not at all times objectionable?

When living in Dublin I used to admire the simpler

habits of the kind and open-hearted inhabitants of that city. Often have I been out for the evening in a quiet way, and after spending a few pleasant, cheerful hours, have returned home without being inconvenienced by pressing invitations to take an unnecessary and indigestible meal. Perhaps few men during the summer half of the year lead a more active life, few have more to worry them, and few have their brains so continually on the whirl, and yet three moderate meals a day are sufficient for my wants. Have we not all heard of the singularly abstemious habits of two of the hardest workers and most famous scholars of our time—Cardinal Manning and Cardinal John Henry Newman—who, at the extreme limit of life, preserve a vigour and activity that would be remarkable at fifty-five or sixty. The upright carriage and commanding tones of Dr. Manning tell of unbroken strength and iron nerves, not of self-indulgence and over-eating.

Cheap and simple food should be all that rich and poor alike should desire, and were something more generally known of the properties of foods and the art of cooking, few families need complain of insufficient diet. Six shillings a week will — I speak advisedly and from experience—provide one person with all the necessaries and some of the luxuries of the table, and thus four or five grown up people, living together, could cut down their food bill to less than £80 a year. This makes no provision for wine and tobacco, but, although not perhaps in all cases dangerous luxuries, they are not necessaries. The great thing is to begin by training up children to simple habits. Unless the tastes are from infancy simple and inexpensive, how can it be expected that in later life it will be pleasant to sit down to a frugal meal, and how little likely that we shall find it as palatable and agreeable as a banquet?

During the first ten years a child learns more than in all the rest of life; then is laid the foundation of habits and tastes that may be partially overlaid by other habits and less pure tastes, but there, nevertheless, they remain for ever. Thousands of lessons are engraved on the child's retentive memory, and in the devious voyage of sorrow and disappointment that takes him far from his childhood's home, far from the affectionate words of his mother and the protecting love of his father, his actions are influenced, and his destiny moulded, by what he then learnt and remembered. Many an aged man on whom time has roughly laid a heavy hand, and whose stony and rugged path has not been cheered with tender associations to soothe his declining moments, has chiefly to thank his parents for the troubles of sixty years. Another man looking back over the placid expanse of a happy and useful life, owes more of the peace of the eventide to the teaching and counsel of the departed than he perhaps knows.

The liking for such cheap and wholesome foods as oatmeal, then, must be formed in early years. The middle-aged who take up this food, but who have not learnt to relish the simple and sparing diet which I advocate for all, will not find it easy to begin to form new habits; but they can, at least, train up their children more wisely. They could lay the foundation of good habits in the young, were they to act prudently and candidly, and without pleading excuses that they cannot afford dearer foods. No one should ever resort to the mean shifts and equivocations with which a Scotch clergyman once tried to cultivate a liking in me for fat, oatmeal, and some other foods, telling me that they were good for me, and that the Highlanders lived on them. He, however, preferred other foods. Let parents and guardians place before the young any food fit for the human stomach; and let them by precept and example show that they choose simple and frugal dishes because of their wholesomeness and palatableness. Then the young learn to eat without questioning what is set before them, and have no cause to wonder why papa compels them to eat porridge to make them strong like the Highlanders, while he eats cold chicken and warm buttered toast, though he does not pretend that such rich viands are wholesome and nutritious.

Good Scotch oatmeal is cheap and wholesome, and should be far more used. I do not think we can claim that it surpasses flour in nutritive value, though there is a common impression that it does. Oatmeal is richer in mineral constituents and fat, but its nitrogenous and carbonaceous constituents are about the same in percentage proportions as those of flour. Unfortunately, the retail price of oatmeal has risen in England, so that, though Dr. Letheby, in his well-known and invaluable book on Foods, states that it can be got at 2d. a pound, from enquiries which I made in Birmingham I believe that inferior kinds fetch 3d. the pound; though in large amounts good oatmeal is obtainable at 2½d. a pound—perhaps, in these days of low prices, even at 2d. White bread is less nutritious than oatmeal—of that there is no doubt; but the former is just half the price; so that we pay extravagantly for the greater dietetic value of oatmeal if it commands 3d. a pound.

Porridge will, nevertheless, be found as economical as bread, for with the former milk can be eaten, while butter, a very expensive food, is taken with the latter. As, under present circumstances, oatmeal porridge is as dear as bread, what are the advantages claimed for it? First and foremost, there is the addition of an economical and wholesome food to our national dietary; and second, that for children the larger proportion of nitrogenous and mineral matter is useful. If oatmeal can be purchased at three halfpence the pound, then, as it is slightly more nutritious than wheaten flour, it would be a decidedly cheaper food; for, as butter or dripping is generally eaten with bread, the cost of the latter is greatly increased thereby. In middle-class households the butter bill is hardly lighter than the bread one. Oatmeal does not make good bread, but is well adapted for cakes, which may be eaten unleavened, as in Scotland, where they are called bannocks, or, as was, and perhaps is still, the custom in the North of England, leavened. In Norway oatmeal is mixed with potatoes, and baked in a frying-pan, and a cheap and nutritious dish results.

To make oatmeal thoroughly nutritious and wholesome requires careful and abundant cooking. As a nation the English are commonly too careless and idle to prepare porridge or anything else properly; but, as oatmeal, when imperfectly cooked, is heating, wasteful, and unpalatable, it is no use having porridge, or any preparation of oatmeal, unless thoroughly cooked. The Scotch are more painstaking, and boil their oatmeal thoroughly. To mix oatmeal with boiling water is not sufficient, and is a wasteful and careless way of preparing it.

Oatmeal cakes, flavoured with expensive condiments and made with butter, are exceedingly palatable; but not cheap, and as additions to the dietary of the poor are out of the question. If we want to utilize the cheap foods of other countries, we must be economical in our methods of preparing them.

All foods that cease to be the diet of the poor, and become the expensive luxuries of the opulent, are dear

and scarce. Oatmeal, once the staple food of millions of our countrymen, is little used except by the well-to-do, and is consequently dearer than formerly. Were the demand largely to increase, the supply would become greater, and competition would reduce the present prices, which still admit of substantial reduction, the wholesale price being less than one penny a pound. Even at threepence a pound oatmeal is cheaper than most foods, and, well cooked and eaten from childhood, would be a valuable, wholesome, and good food for children and adults.

"LIKE BEGETS LIKE."

By Dr. E. J. Dungate.

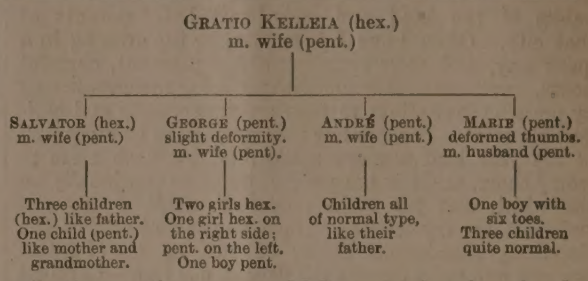
FOURTH PAPER.

PECULIARITIES IN STRUCTURE.

It is not uncommon for a mother to have several children afflicted with club-foot, and a tendency to reproduce this deformity will pass through several generations. Dr. Adams, in his work on "Club-foot," gives a family history which illustrates the tendency. "T. Hall, a labouring man, aged 46, was born with *talipes varus* of both feet, and is said to have been partly cured by mechanical means. . . . This man has a brother who was born quite free from the deformity, but has a club-footed child. He does not know of any other case of club-foot having existed in his family. Hall has had thirteen children by one wife, a strong, healthy woman; five children have been club-footed, three boys and two girls; and in four both feet have been affected. . . . The eldest of the five club-footed children, a girl now nineteen years of age, has also lately had a club-footed child, her first child, and this is a case of *talipes varus* of one foot."

Polydactylism, or the possession of supernumerary digits, is by no means so rare as one is apt to suppose. One of the sons of Goliath of Gath, who, like his father, was a man of great stature, had six fingers on each hand, and six toes on each foot. Pliny speaks of a Roman poet called Volcatius, who had six fingers on each hand, and consequently received the surname of *Sedigitus*. He also mentions that two daughters of a Roman, M. Curiatus, possessed each six fingers on each hand, and they had the surname *Sedigitæ*. Anne Boleyn had six fingers on each hand. In the Colburn family there were four generations all characterized by supernumerary digits. Zerah Colburn, the American calculating boy, had this peculiarity. Every one knows that variety of the English fowl which is called the Dorking. This fowl has two toes behind, which gives it five toes on each foot, whereas the ordinary number in birds is four; and the peculiarity is permanent. M. de Quatrefages remarked that a six-toed cock transmitted his peculiarity to his descendants. This spread to such an extent that in the district where it occurred the common five-toed variety was no longer to be found. A note in Palmer's edition of "Hunter's Works" states that there exists a race of dogs which have a supernumerary toe on each hind foot.

The interesting case of the six-fingered condition in the Kelleia family, which has often been referred to by writers on this subject, we represent by the following "tree," using *hex.* (for hexadactylic) to denote the possession of six fingers on each hand and six toes on each foot, and *pent.* (for pentadactylic) to denote the normal condition.


Gratio Kelleia (hex.)
m. wife (pent.)
Salvator (hex.) m. wife (pent.)
George (pent.) slight deformity. m. wife (pent).
André (pent.) m. wife (pent.)
Marie (pent.) deformed thumbs. m. husband (pent.
Three children (hex.) like father. One child (pent.) like mother and grandmother.
Two girls hex. One girl hex. on the right side; pent. on the left. One boy pent.
Children all of normal type, like their father.
One boy with six toes. Three children quite normal.

Gratio was the son of a Maltese couple, whose hands and feet were quite natural. Salvator, son of Gratio, was purely hexadactylic. George and Marie were slightly deformed. The result of the marriages of the four children of Gratio with persons who were quite normal as to their hands and feet is highly interesting. If hexadactylic persons had become allied to the hexadactylic portion of the family, it is probable that a hexadactylic variety would have become permanent. Experience proves, however, that there is in these cases of polydactylism a tendency to revert to the normal type. In the Colburn family, which we mentioned above, the sexdigitism continued through four generations; but, as Burdach points out ("Physiologie," vol. II.), they began to return to the pentadactylic condition. The relation of the normal members of the family to the abnormal was:—

1st generation,	as	1	: 35
2nd	,,	,, 1	: 14
3rd	,,	,, 1	: 3¼

Maupertius tells us there were two families in Germany who, for several generations, had been characterized by six fingers on each hand and six toes on each foot. Jacob Ruhe, who was a surgeon in Berlin, belonged to one of these families, and inherited the peculiarity from his mother and grandmother. His father was quite normal. He had eight children, of whom four were like himself, and four inherited the mother's peculiarity. Jacob Ruhe transmitted the peculiarity to his posterity. Sir Arthur Mitchell, in the third Morisonian Lecture which he gave at Edinburgh, mentioned a man whose father, brother, and sister had six fingers on each hand. He himself was five-fingered; but he married, and his first child was six-fingered. This is an example of a defect being transmitted first potentially, and then actively.

Harris (see "Highlands of Æthiopia") gives the following example of supernumerary digits: "The Arab chieftain of the Foudthli, of whom flying parties still infest the deserts of Aden, is renowned for the possession of two thumbs upon his dexter hand—a proud distinction, by which his ancestors have been recognized from time immemorial." Professor Annandale, in his work on "The Malformations, Diseases, and Injuries of the Fingers and Toes," has the following case of supernumerary fingers and toes. "The patient was a boy, aged fourteen, who had a rudimentary finger on the right hand connected loosely to its ulnar aspect. He had also at birth a supernumerary finger attached loosely by a pedicle to the ulnar side of the left hand, but it was removed when he was an infant. This patient had also six toes on each foot. The supernumerary digits possessed only very slight movement, and were quite useless. The lad was one of a large family, and four of his brothers and one sister had exactly the same deformity of the hands and feet." In 1818, M. Van Derback recorded some observations concerning a family in San Martine Vadeclesia, a village of Old Castile. A peculiarity of

this family was, that there was a tendency for the bones of the fingers to split. The tendency of the phalanges to split was noticed in as many as forty members of the one family.

In vol. xlvi. of the "Transactions of the Medico-Chirurgical Society" there is a case of a transmitted defect, which is thus described by one of the family in which it was found—"We are accustomed to call our hands double-jointed, because all the joints of the fingers are thick. Another characteristic is that the ring and little fingers are very crooked from the last joint. . . . This peculiarity is distinguishable at birth. . . . We think that the joints have become less in size in the present generation, and often it is only the middle finger, the joints of which are thick; but the ring and little fingers of both hands are as crooked now as they were four generations ago." A study of this case shows that children inheriting the deformity from their father had it in the most marked degree.

Dr. Ogle mentions a case of hereditary transmission of deficiencies in the fingers, which was related to him by Professor Rolleston. A woman at Oxford had the following peculiarity in the fingers of both hands:—The index fingers were the shortest, the middle fingers the next shortest, the ring fingers the longest of all, and the little fingers the next longest. This strange variation had already (in 1872) extended to four generations, being found in the woman and her little boy, in her father, and in her father's mother.

The following case is reported in the *Medical Times and Gazette* for November, 1863:—The third and fourth toes of the right foot of a woman were joined together throughout their entire extent, the hands and feet of her husband exhibiting nothing abnormal. She had seven children, none of whom presented their mother's deformity. In the third generation, however, one of her daughters had, among other children, a girl who exhibited a palmated condition of the medius and ring-fingers, just like the toes of her grandmother. Another sister also had, among her other children, a boy and girl both with the medius and ring-fingers palmated. Of three brothers of the two above-named sisters, one had, among five male children, his eldest with fingers exactly like those of his cousins, making altogether four children in the third generation who inherited the abnormal digitation of their maternal grandmother. In the fourth generation, one of the grandchildren, the eldest of the boys with the palmated fingers, became the father of female twins, one of which had her toes united exactly like those of her great-grandmother, and of a boy who presented the same peculiarity of the fingers as did his father. The case is further remarkable, inasmuch as the anomaly was always witnessed in the eldest children, and always on the right side.

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With health all taste of pleasure flies."—*Gay.*

THE CARE OF THE NOSE AND THROAT.

It was with intense interest that we recently noted the treatment recommended for a family, the members of which were predisposed to what the physician considered diphtheritic sore throat. The treatment was indeed so plain that it might pass the eye as too simple to deserve more than passing notice. Not so did it appear to us. The measure recommended was to carefully gargle the throat and wash the nose-passages of the patients while comparatively well with a disinfectant solution, and not to interrupt the treatment while disease was rife in the household or neighbourhood. We are assured of the success of the plan. Let us enlarge a little upon this theme, for it seems more than important.

It is a function of the nares, or nasal passages, to warm and strain the air. That the throat participates in this operation is seen by the black expectoration emitted, for example, in a tunnel. Now it is self-evident that the healthier any membrane is, the better it will do its work. Suppose, on the other hand, the membrane be inflamed, thickened, and unhealthy, then the irritating particles which tend to produce catarrh and taint the air inhaled may do much mischief. Further, the secretion thus excited is likely to be more or less absorbed by the glands at the back of the throat, and to exert in time an action which may be anything but desirable. The ablution of the face and hands is performed often daily with punctilious pains. The cleansing and care of the teeth is likewise no neglected or trivial matter. Yet the results of negligence in these particulars, however much to be regretted they may be, can hardly for a moment compare with those serious consequences that may accrue to the consumptively inclined from inattention to the hygiene of the nose and throat. To those living in the country all this does not so fully apply as it does to the dwellers in towns, breathing a dust-laden, vitiated air.

We would, then, recommend as an addition to the toilet of those prone to catarrhal troubles, and with consumptive tendencies, the scrupulous daily cleansing of the nasal passages and throat. A small hand-spray will answer every purpose. This should contain some 2 per cent. solution of carbolic acid, in which a couple of tabloids of chlorate of potash and borax have been dissolved. On rising in the morning, some of the spray may be thrown for a minute or two first into one nostril and then into the other. A tabloid should afterward be placed in the mouth and crushed between the teeth, a draught of water taken, and the throat carefully gargled. When there is diphtheria in a house some such course as that outlined here should certainly be followed.

While one considers and adopts measures to prevent poisons entering one's dwelling, certainly he should not be less mindful of adopting all precautions possible against their entering the body.

Among other medicaments that may be recommended instead of the foregoing are a solution of common salt, permanganate of potassium or zinc tabloids, and (inhalations of) substances like terebene, eucalyptia, pinol, &c., the value of which is well-known.

It will be obvious that by the salutary measures above advocated, the breath will be sweetened and pure, and disagreeable and mortifying expectoration avoided.

ON THE SENSE OF TASTE.*

By E. S. Bailey and E. L. Nichols.

At the Philadelphia meeting of the American Association we presented a paper upon the "Delicacy of the Special Senses," a topic upon which we have since continued our investigations from time to time.

The method pursued in the following experiments was as follows:—

Solutions of known strength were made of the substances to be tasted; then, by successive dilutions, several series of solutions were made from these, each one in the series being of one-half the strength of the preceding one. The bottles containing these solutions, and several bottles of water, were placed without regard to order, and the person to be experimented upon was requested to separate them into their proper groups by tasting them. In each series the last solution was so dilute as to be beyond recognition. All unrecognized solutions were classified as water.

We chose for our tests the following typical substances. The strength of the initial solution of each is given below.

1. (Bitter) quinine, one part in 10,000 parts of water.
2. (Sweet) cane-sugar, one part in 10 parts of water.
3. (Acid) sulphuric acid, one part in 100 parts of water.
4. (Alkaline) sodium bicarbonate, one part in ten parts of water.
5. (Saline) sodium chloride, one part in 100 parts of water.

The attempt was made to include other substances, as aromatics, in the test; but it was soon found that the odour betrayed their presence without the aid of the sense of taste.

Other investigators have added astringents as a sixth class, but these substances are so often recognizable by odour, colour, or some special taste not purely astringent, that it was thought best not to include them.

Tests by the method above described were made upon 128 persons, 82 being male, and 46 female observers.

The following table shows the amount of each substance which could be detected by the average observer:—

Substances.	Male observers detected.		Female observers detected.	
Quinine	1 part in	302,000	1 part in	456,000
Sugar	,, ,,	199	,, ,,	204
Acid	,, ,,	2,080	,, ,,	3,280
Soda	,, ,,	98	,, ,,	126
Salt	,, ,,	2,240	,, ,,	1,980

From the above results the following conclusions may be drawn:—

1. The sense of taste is vastly more delicate for bitter substances than for any others. It is possible to detect quinine in a solution that is only $\frac{1}{2000}$ the strength of a sugar solution, and we have previously shown (*loc. cit.*) that quinine is only $\frac{1}{10}$ as bitter as strychnine.

2. The order of delicacy is, bitter, acid, salt, sugar, and alkali.

3. The sense of taste appears to be more delicate in women than in men. This is true in the case of all the substances excepting salt. As we had found a similar difference in favour of female observers in an earlier and independent set of experiments, which agreed in every essential particular with the results of the present test, we do not regard it as an accidental difference, or as likely to disappear in more extended investigations.

Marked differences in the delicacy of the sense of taste of different individuals were met with in the course of these experiments. There were persons who could place in the proper class solutions containing one part of quinine in 500,000, and other substances in correspondingly high dilution, while some failed to detect solutions of more than three times the above strength. In how far this was due to education we are unable to say. Among the men examined were many who have been accustomed to handling and recognizing drugs and medicines, and yet even these were frequently surpassed by female observers who had no such training.

In some previous experiments upon the sense of smell, of which an account appeared in *Nature* (*loc. cit.*), we noted almost as marked a superiority on the part of male observers.

In a few cases the ability to detect a dilute sweet was accompanied by a lack of ability to detect dilute bitters. This peculiarity was, however, far from being a general one.

As quinine is so largely used as a medicine, especially in the Western States, it was thought that its habitual use might dull the sense of taste for this particular substance. Among the observers subjected to our experiments the use or disuse of quinine seemed to have had no especial influence.

The experiments just described suggested several interesting questions upon which we were unable to enter. How many, for instance, of these substances, taken of equal delicacy-strength, could be detected together in a mixture, in what order would they be detected, and by what portion of the tongue or organs of taste? Would all observers recognize them in the same order as to time? What would be the influence of the temperature of a solution tasted upon the delicacy of the sense of taste?

As to the degree of accuracy with which our results give the average delicacy of the human sense of taste for the substances in question, we are led to believe from their substantial agreement with determinations based upon the previous set of experiments already alluded to, alike in the matter of absolute delicacy, of relative delicacy, for the various substances used, and of relative sensitiveness of male and female observers, that they are but slightly influenced by individual idiosyncrasies, and may be regarded as fairly representative.

* Paper read at the New York meeting of the American Association for the Advancement of Science, August, 1887.

Iodine Stains.—A twenty per cent. aqueous solution of sulphide of sodium will remove these.

The Local Government Board have issued the following circular:—Vaccination.—Children are vaccinated for the purpose of protecting them against small-pox. The law requires this protection to be given them in the first months of life. Hundreds of children now-a-days die of small-pox for want of vaccination, just as thousands used to die before vaccination was discovered. Vaccinated children, even if they should take the disease, hardly ever die of it. They recover without the blindness and scarring so common after small-pox in unvaccinated children. Parliament has provided the means for vaccination being everywhere properly done. When it is so done, "there need be no apprehension that vaccination will injure health or communicate any disease." These are the words of the Select Committee of the House of Commons in 1871, and they are as true to-day as when they were written. Vaccination ought to be repeated for children of twelve years old, so that they may get fresh protection against small-pox, and under some circumstances this "re-vaccination" should be done at an even earlier age. The protection given by a recent re-vaccination is such that "re-vaccinated" persons can even live in small-pox hospitals without catching the disease. Vaccinations and re-vaccinations are done by Public Vaccinators without cost to parents.

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SANITATION IN ARCHITECTURE.

By D. L. Stiles.

Paramount to everything else, good health is essential to happiness; and from the fact that two thirds of our lives are spent within doors, it is important that every care be taken in the arrangement and construction of our buildings to render them free from possible dangers to health. Our habits and modes of living create the necessities in domestic architecture, and in providing for these necessities, none demands a greater amount of study than those relating to their sanitary arrangement. In the effort to do justice to the subject of this paper, I shall, for obvious reasons, confine myself to the practical or applied portion of sanitary knowledge, and will draw the line between the various causes of disease in our homes, and the methods at present in use for counteracting them; and aside from the subjects of light, heat, and air, important sanitary factors, I will direct attention to that particular branch of sanitary work which relates to water-supply and drainage; and, if I but point out some of the evils, and do not suggest a remedy, the hint may strike some brighter mind, and lead to the ultimate solution of some very difficult problems in "sanitation in architecture."

One of the chief things to be considered is the disposal of the soil and wastes of the house, without offence to ourselves or neighbours. The plumbing of the house is the first thing attacked when disease makes its appearance, and usually with good reason. It is almost the universal custom now-a-days, especially in our large cities, to have even moderate-priced cottages fitted up with hot and cold-water service, a water-closet, and bath. Hand in hand with these indoor conveniences, so valuable to the feeble or invalid, come drainage and the danger of deadly sewer-gas. I believe it is possible so to place the fixtures, as to render them absolutely safe. But how many are so placed, I will not undertake to state. There are three principal causes for failure in this respect:

First—Want of proper designing in the beginning, either from ignorance or carelessness.

Second—Imperfect workmanship.

Third—The cost.

In the first case, the fault lies wholly with the architect, for he should be able properly to design the work. In the second, with the building contractor, who should be able to execute it, and in the third, with the owner himself, who from mercenary motives will tolerate cheap and imperfect work. Careless architects sometimes overlook the importance of the plumber's work, and are apt to go on through force of habit, and specify errors from year to year, and never know the difference until disease of some kind points to the plumbing as the source.

We must fight nature with her own weapons, and, with one or two exceptions, water is the article used as a barrier to prevent the entrance of sewer-gas into our houses through the pipes. Water is also the common carrier, by means of which the excreta and other refuse are carried into our sewers. It leaves the matter in much the same state as it receives it, and, I believe, exerts no disinfecting power. Water used in this way is by no means a modern idea.

A successful closet must be nearly automatic in its action; it should have no hidden chambers in direct connection with the bowl, that are liable to collect particles of filth which may in time generate foul and dangerous gases to be thrown off into the room. It should be so connected that no possible back pressure can be exerted from the sewer that would be likely to deprive the traps of their water-seal. In other words the soil-pipe should be open to the outer air at both ends. A constant circulation of out-door air can thus be maintained at all times. The method of connections should apply to every fixture in the house. The present custom of boldly exposing every pipe, trap, and bowl to full view, is one step far in advance of the old method of closing everything in the neatest of woodwork so that none of the piping was visible, and after the work was finished no one knew what was behind it. It was at once a receptacle for dirt, and often the dried results of an overflow of filthy water, and a general cloak for carelessness and neglect, and in time became a veritable pest spot, and disease followed. The physician points to the plumber. An expert is called in, an investigation takes place, and a woeful state of things discovered. Possibly no traps under any of the fixtures, and if they are there, they are so connected as to be deprived of their water-seal through siphonage, three-fourths of the time, or so bunglingly put in as to provide an avenue rather than a preventive.

Safety and immunity from trouble of this kind can only be had by the use of brains and common sense in the beginning, and watching the workmen who are charged with the execution of the plan; and we cannot hope for success, if after the entire system is finished and in use, it is not properly taken care of and managed with intelligence.

A constant vigilance is necessary to keep a system of piping in working order, and every physician knows it is useless to prescribe medicines if the patient will not follow his advice. So it is with any system of sanitary appliances. They may be properly arranged in the beginning, but neglect and abuse will surely destroy their efficiency. The rigour of our climate demands that our houses should be closed against the weather, compelling us to warm the air for breathing, artificially, before introducing it into our rooms, and because of an inefficient apparatus, the out-door air is shut off and the supply taken from the cellar, which is often found damp, mouldy, and filled with all sorts of rubbish and decaying vegetable matter; this reminds me of a prescription once given to a man (so the story goes) as follows. He had applied to the doctor for advice, and, after showing him the premises, the doctor wrote:

"Rake and broom, 1; shovel, 1; wheel-barrow, 1. Sig. Use vigorously every twenty-four hours until relieved; sunshine will do the rest."

Hence, in building, professional advice should be first obtained, and the work entrusted to honest and competent mechanics, and then remember that "Cleanliness is next to godliness," and is only secured by strict methods. Even when houses stand isolated the owner cannot neglect his own household. It might be shown upon examination oft-times that the architect and plumber are not to blame.

Those who are sometimes annoyed by a creaking door may be glad to know that by rubbing the end of a common lead pencil upon the offending hinge it will immediately be reduced to absolute silence. Blacklead is one of the best lubricators known.

CONTAMINATION OF WATER BY LEAD.

There has been quite a lead-poisoning scare in Sheffield, which has called out the usual number of theories and suggestions. Among others, Dr. Sinclair White has proposed a simple remedy—namely, filtration through lime—which seems likely to be adopted.

The *Journal of Gas-Lighting* directs attention to a letter recently addressed to the *Sheffield Telegraph* by Mr. Alfred H. Allen, F.I.C., F.C.S., President of the Society of Public Analysts, in which some suggestive remarks are made. The proportion of lead which is generally considered to render water seriously objectionable is one-twentieth of a grain per gallon; but Mr. Allen says there is some reason to believe that in cases in which serious effects have been observed in Sheffield, the proportion has considerably exceeded this limit. It must not be supposed, however, that there is any danger in drinking a glass of water containing such a minute proportion of lead. It is not the single dose or a dozen doses which will produce any ill effects, but the constant use of such contaminated water. Lead is a cumulative poison, and each successive dose becomes stored up in certain organs of the body until the poisonous effects ensue. Further, it must not be supposed that every one is equally susceptible to the effects of lead, there being a great difference in this respect.

Mr. Allen adduces a striking instance, which came within his own experience, of the way in which lead-poisoning may occur. A year or two since a member of his family suffered from symptoms which her medical adviser considered to be due to lead-poisoning. The water drawn from the tap the first thing in the morning contained half a grain of lead per gallon, and about half this proportion after being allowed to run. By passing the water through a particular description of carbon filter, every trace of lead was removed; but tea made from such pure water was sometimes found to contain 0·75 grain of lead per gallon. Analysis showed that the tea as bought was free from lead, and for some time Mr. Allen was puzzled to account for its presence. It was afterwards found that the fur, or deposit, inside the kettle contained a considerable proportion of lead, some of which became dissolved in the water boiled in it. The kettle being replaced by a new one, the symptoms of lead-poisoning disappeared under proper treatment. He attributed the lead in the deposit to a servant having habitually filled the kettle from the hot-water tap, for hot water, it appears, acts on a lead pipe much more vigorously than cold.

It is reported by the Medical Officer of Health (Dr. A. Mackintosh) that from 100 to 150 more people are suffering from lead-poisoning in Chesterfield.

Sick Headache.—Two grains of pot. iodide in water taken in divided doses at intervals of five minutes has a good effect.

Bottles.—The number of bottles made in the world at the present time is estimated to amount to quite *sixteen and three-quarter million gross per annum.*

The *Shoe and Leather Record* (30, Finsbury-pavement, E.C.) has of late been publishing a series of able arguments on "The Sweating System" as carried out in the trades with whose interests the *Record* concerns itself. These reports should be perused by all who have the welfare of the poor at heart. They throw much-needed light upon the horrors of the modern "grad-grind" trade-philosophy, which is fraught with such evil and misery to all concerned.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

ON THE POWER OF MUSIC AND ITS PLACE IN MEDICINE.

By Guy C. Rothery.

FOURTH PAPER.

We have travelled a long way in search of these more or less abstract theories—necessary excursions, however, for the better understanding of our immediate subject. We must now return to the region of medicine and the theory of practical musical therapeutics.

Taking the commonly-accepted physicist's theory of Music—with its atmospheric sound-waves, tympanum vibrations, and nervous stimulation and exhaustion, by the horns, we see that the musical pathologist has still a leg to stand on. It is not difficult to understand that by producing excessive nerve-waste, a sensation (mental and physical) of a more or less decided character will be set up. Or, again, by soothing the auditory nerves by means of gentle and agreeable stimulation, we induce repose and certain well-marked physiological effects.

Voltaire satirically observed that people were in the habit of going to the opera in order to digest. This was a truth spoken in jest. Milton loved to play on his favourite organ after dinner, "putting his soul in tune," and thus unconsciously pursuing one of the wisest medicinal courses that could well be devised. Music during, or immediately after, meals is, without doubt, of immense utility to the human system. Acting intellectually or emotionally, it produces pleasurable sensations on the patients, by giving rise to a calm enjoyment, which allows Nature to pursue her offices unimpeded by outward or inward disturbing circumstances. Thus, the melancholic dyspeptic, unable to eat, and, therefore, to endure the burthens of life, may, by aid of music, receive such a salutary stimulus as to cause physiological revolutions, prompting him to eat, and subsequently allowing the discomforted organs to resume their normal actions, digestion ensuing as a perfectly natural consequence.

This beautifully simple fact was well known and pretty generally acted upon by the ancients, musicians being rarely absent from their feasts.* Sir William Jones speaks from personal experience of the vast benefits of light and agreeable airs after meals in warm climates. But we would recommend the employment of stringed orchestras in the East and West Indies, rather than too decided "doses" of military brass bands.

Still harping on the same string, we find mothers and nurses calming, most effectually, babies and young children with soothing and sweet music; for the mind powerfully influences the body, and the body re-acts on the nervous system and mind. Under the sway of music, body and soul may be said to be united in a close embrace. Acting directly on the nervous system, music is able to stimulate or soothe the brain, move the mind to action or lull it to slumber, the body necessarily feeling the benefit of the re-action thus set up. Anger makes us

* Plutarch affirmed that the flute could not be spared from the banquet-chamber. "Its rich and full tones spread peace and tranquillity throughout the soul."

feel hot and uncomfortable; fea chills, and makes us tremble; joy, hope, and mirth ca e a pleasurable sensation to run throughout our bodie Now these various and varying emotions, and thei natural physiological accompaniments, have a very rea effect on the animal functions. Heart, pulse, and the rgans of secretion are all affected. We find passions and motions inducing heart palpitations, profuse perspiration obstructed digestion, fulness and throbbing of important rteries, and, above all, the brain generally clouded and o pressed. The normal functions of certain organs are alt red, accelerated, or retarded, and the whole system is up et, and suffers from the evil consequences. We know how much the bodily health depends on the mind; and in jus the same degree does the brain depend on the body. We may easily arouse artificial "reflex" actions; we ve only to stick a pin sufficiently deep in a leg to produce nger, perhaps even fury and retaliation; but if we place soft cushion under an aching head, we get a smile in re rn.

From all this Richard Brown a worthy apothecary of the last century, argues t at we must, in the practice of medicine, study t emotions; and, in order to gain a beneficial infl ence over them, we should call in music to our aid "An allegro," says he, "by short, quick, and brisk impressions upon the auditory nerves, communicates o the mind a lively, pleasing sensation, fills the sou with joy and cheerful ideas, and surprisingly in vigorates the motion of the spirits. On the contra y, the soft languishing trills and melodious strains an adagio touch the nerves so finely, and inspire such ravishing sensations, as that the soul, by a sweet excess harmony, is ready to dissolve in pleasures." Dr. Ch met holds much the same language: "Agitez progres vement le lymphatique par une musique forte et puissa e; calmez le nerveux par des mélodies suaves et do ces. A l'individu du tempérament bilieux, faites ente dre des chants légers, courts et empreints d'une aima le gaieté. Egayez les hypocondriaques, calmez les hy tériques, faites oublier aux épileptiques leurs accès et le s convulsions. Evitez soigneusement surtout de rappeler, par vos mélodies, tout dont l'âme entièrement occu ée, devrait au contraire être à jamais dégagée."

Steinbeck, in his learned Latin 'Thesis," treats largely of the varying effects of music o the sexes; on infants, youths, adults, and the aged; on those of different temperaments; the "sanguinous" being easily touched, the melancholic deeply affected, t e phlegmatic difficult to move. He then goes into the va ue of instruments and the broad characteristics of com osition; speculates on the different and relative values of religious, theatrical, military, and dance music; the effects of rhythm, harmony, and melody, and their proper proportions from a medical point of view; also glancing at the part necessarily played by musical habits and education. The treatise contains an interesting, i rather indiscriminate, abstract on the influence of music on the lower animals, the author concluding thus: "Quodsi musica tantum jam habeat vin in animalia, quantam in homines ipsos habebit!"

With regard to the peculiar impressionability of lower animals to music, though readers may not care to accept all that has been written on the subject, there is no reason, indeed, no room for betraying an inclination to sweeping scepticism. Many curious facts have been repeatedly observed and recorded by trustworthy authors. Its effect on lizards, spiders, and some other small creatures, is noteworthy. The writer of these papers has frequently attracted, and apparently fascinated, both the ordinary little grey and the large green lizards simply by a continuous soft whistling. Snake-charmers in Africa and the East invariably employ music. Sir William Jones records many curious statements about the influence of Hindoo music. Cavalry soldiers, grooms, and stable-helpers will tell you what they think of the power of music and whistling on horses. On this subject the reader should also see Dr. Chomet's book for many very curious and well-authenticated details.

TERRAPIN.

The salt-water terrapin, the freshly caught terrapin, is becoming scarce. It is true that each year there is a greater consumption of so-called terrapin in the four terrapin-eating cities—New York, Philadelphia, Baltimore, and Washington. Boston has only very recently begun to appreciate it; but for the most part it bears the same relation to the real "diamond-back" that conger does to West Indian turtle. Terrapin is a luxury, and a costly one. The finest specimens of the Chesapeake terrapin are sold in Fulton Market, New York City, at a price varying between sixty and seventy dollars a dozen; the Florida, Georgia, and Alabama coarse terrapin or "gophers," which have been kept all the summer in stews on the great south beach of Long Island, can be bought for fifteen dollars a dozen, and quantities of the male of the "diamond-back" or "red-legged" variety, a far inferior member of the Chelonia family, are on sale at three or four dollars. At the best restaurants the real terrapin can always be obtained in season; but at the lower class restaurants, where terrapin, stewed or in soup, is on the bill of fare all the year round at as low a price as 25 cents a plate, it would be difficult to define the members of the tortoise family which are made to do duty for their more succulent relations. The season opens in November; and the hunting-grounds for the best variety extend from Long Island on the north to South Carolina on the south. Those found on the New Jersey Coast, the salt marshes of the Chesapeake River, and as far south as Charlestown, are considered by far the best. The salt-water terrapin is easily distinguished from other tortoises. The head is large, and is covered with a smooth soft skin; hence it is often called the "soft terrapin." The shell is oval, brown or black, and covered with plates of various geometrical shapes—hexagonal, triangular, and sometimes oblong. The largest and most prized are the females, known in the trade as "cows." These should be at least six inches in length, measured whilst the creature is on its back, excluding the head and tail; if they pass this examination, which is carrried out by means of a stick notched to various lengths, the "cow" is known as a "full count." A dozen of "full counts" of 8 in. long is always worth 60 dols. The largest cow which has been brought to market measured only 9 in. The "cows" contain the eggs which are so highly esteemed. The "heifers" are next in request; these seldom measure 5 in. in length; whilst the males or "bulls" as they are called, are only to be distinguished from very young terrapin by a groove or seam which runs across the under-shell from end to end.

The terrapin is caught in great quantity in the summer months, when the female is about to deposit her eggs, and it is then generally conveyed to one of the numerous stews or pens on the Long Island or New Jersey coasts. The most important of these pens are at Pleasure Bay, a favourite picnic resort near Long Branch. Here, fed meanwhile on small fish, cabbage, lettuce, or water-

melon, they await the opening of the season in November to appear at Fulton Market as "freshly caught." Some experience is required to distinguish the penned terrapin from his freshly caught cousin; the marks of the former being that the under shell is rough and scraped and the hind legs somewhat sore. The pens are constructed so that they are filled with sea-water at every high tide; the terrapin breed there, but the young ones nearly always escape. With the gourmets and the *fins becs* no terrapin but a freshly caught "full count" will pass muster. These are found by the hunters when the cold weather has come; and they are dug out of the holes in the muddy marshes into which they have burrowed, intending to hibernate. Then are they fat and juicy, and will vie with, if they do not actually excel, the green turtle in delicacy of flavour. At the low tide the terrapin-hunter sallies forth with his small notched stick and a sack, and wades in the soft mud until he comes to a bank raised six or eight inches above the level of the marsh. The practised eye soon discovers some trace of the little sleeper; an air-hole or a slight raising of the mud betrays him; and in no time the stick prises up the victim, who does not snap and bite now as he did in the warm shallow summer seas. Terrapin-hunting is hard work, and competition is great; "full counts" are rare, and the hunter who can average two a day is a pretty lucky man.

Baltimore claims the honour of having first discovered the value of terrapin for culinary purposes, but the three other terrapin-eating towns were not slow in following up the enterprise of "the monumental city." New York alone consumes 1,000 dozen a year; but of this number only about 400 dozen are "full counts." Terrapin soup is imported into England in tins; but the flavour and delicacy of it as experienced at Delmonico's or Gilsey House in New York, and Painter's or Rennert's in Baltimore, have entirely departed from it.—*St. James's Gazette.*

Who is Never Crazy?—There are many firm believers in the theory that most people are crazy at times, and facts seem to support their belief. The following, from a source unknown to the writer, will likely remind a number of our readers of some incident in their experience, which at the time of its occurrence seemed to them most unaccountable:—"A wise man will step backward off a porch or into a mud puddle, a great philosopher will hunt for the specks that are in his hand or on his forehead, a hunter will sometimes shoot himself or his dog. A working girl had been feeding a great clothing knife for ten years. One day she watched the knife come down slowly upon her hand. Too late she woke out of her stupor with one hand gone. For a few seconds her mind had failed, and she sat by her machine a temporary lunatic, and had watched the knife approach her own hand. A distinguished professor was teaching near a canal. Walking along one evening in summer he walked as deliberately into the canal as he had been walking along the path a second before. He was brought to his senses by the water and mud and the absurdity of the situation. He had on a new suit of clothes and a new silk hat, but though the damage was thus great, he still laughs over the adventure. Our mail collectors find in the iron boxes along the streets all sorts of papers and articles which have been put in by some hand from whose motions the mind has become detached for a second. A glove, a pair of spectacles, a deed, a mortgage, a theatre ticket goes in, and on goes the person, holding on to the regular letter which should have been deposited. This is called absent-mindedness, but is a brief lunacy."

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON DRUNKENNESS.

Inebriety: Its Etiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M.D., F.L.S., &c. (London: H. K. Lewis. 1888.)

SECOND NOTICE.

Dr. Kerr's further discussion of the causes of inebriety, leads him to consider in detail such conditions as education, heredity, disease, diet, &c. Space will not permit us to do more than glance at *some* of the points he enforces on the attention of his readers. *Education and culture* are, alas! "no bar to inebriety"; indeed, our author tells us that the disease "is indebted to the cultured portion of society for a large proportion of its subjects." As regards the circumstances of the patients, it would seem that affluence has a distinct effect in inducing drunkenness. With the poor, it is different. "Indigence," as Dr. Kerr puts it, "is generally a consequence, not a cause."

As concerns *occupations*, the professions which predispose to brain-worry present a notable proportion of victims; but it is also clear that certain trades—such as those of laundresses and washerwomen—from their very nature induce inebriety, probably through the craving for drink which the surroundings of the trades induce. There is no great difference, again, perceptible between the number of *married and unmarried* males who have been officially enumerated as inebriates: as regards females, "the proportion of inebriates was much lower than among the unmarried, the ratio being about 1 to 6 of the married or widowed."

The conditions which environ or tend to favour inebriety as a disease are thus shown to be of singularly complex character. Nor is this surprising, seeing that drunkenness as a vice of our social life simply reflects the complicated nature of that existence. Of the influence of heredity in the matter of inebriety a word or two is permissible. If there is one condition which militates strongly in favour of the development of the "drink-instinct" than another, it is assuredly the *inheritance* of that instinct from parents or more remote ancestors. Very well founded facts attest the truth of the idea that the children of drunkards are born, as a rule, mentally weak, and are deficient in that inhibitory or controlling power which makes up so much of healthy manhood and womanhood in a moral sense. It is alleged that the mother's share in transmitting inebriety to her progeny is more powerful and potent than that of the father. Her influence, so to speak, preponderates, and this, doubtless, largely because upon her devolves the nutrition of the unborn child. How great and how weighty becomes the responsibility of parentage in this matter of temperance may therefore be estimated. There is no more direful legacy which can be bequeathed by parents to offspring than the instinctive and inherited tendency towards alcoholism—a feature of the organization this which bids fair utterly to handicap the individual in the race of life.

An interesting consideration is brought forward in connection with this subject in the shape of the question, does the use of *tobacco* tend towards the development of drunkenness as a disease. Abstainers often urge that tobacco is a feeder, so to speak, of inebriety; but Dr. Kerr only re-echoes the experience of life that many

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Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Early Rising and Longevity.—Professor Humphry's recent Collective Investigation Report on Aged Persons, published in the *British Medical Journal*, contains some very positive evidence on a matter which has already engaged the attention of moralists as well as physicians. "The opportunity for nutrition to do its restorative work was in nearly all provided by the faculty of 'good sleeping,' to which was commonly added its appropriate attendant, the habit of 'early rising.'" Thus there is a relation between early rising and longevity. No doubt many people will hastily seize upon the sentence just quoted, and employ it in edifying lectures or essays for the perusal of youth, or embody in it popular medical works. Important qualifications follow in Dr. Humphry's Report, but they are likely to be overlooked. Doubtless the habit of early rising is, in itself, healthy; most of all, it is a good sign of health when it evidently signifies rapid recovery from fatigue. Again, it usually denotes a strong will, the gift as a rule of a good physical constitution, or at least the safeguard of average bodily strength. Late risers are generally either invalids or persons of bad habits, idlers who are never free from other vices besides idleness. The nervous exhaustion which keeps a man wakeful throughout the small hours produces sleep late in the morning. This exhaustion is invariably due to one of several life-shortening influences, especially anxiety or indiscretion in diet or drink. Early rising is thus rather one effect of certain favourable influences, another result of which is longevity, than a cause of longevity. To turn a weakly man out of bed every morning at seven o'clock will not prolong his life. It will be noted that by "good-sleeping" Professor Humphry signifies quick sleeping, "that is, the reparative work which has to be done in sleep is done briskly and well." Here, again, we have an effect of a cause; but preventing a weakly subject from sleeping more than four or five hours nightly would not cause him to live long, but would rather tend to shorten his life. Equally important are Professor Humphry's observations which show that by "early" he does not entirely mean the time by the clock. The word "has a relative significance with reference to the time of going to bed. A person who retires to rest four hours after midnight and gets up at 10 A.M. may be strictly regarded as an 'early riser.'" Thus early rising is synonymous, in long life histories, with short sleeping, which means rapid recovery from fatigue, a sign of bodily strength. These scientific facts in no wise contradict the alleged value of early rising as a practice to be cultivated by all persons in good health. It is excellent as moral discipline, and eminently healthy as a matter of fact. Most persons will eat three meals daily. When a man gets up late those meals will probably follow each other at too short intervals to be wholesome. When he is an early riser it will probably be otherwise. He can enjoy a good breakfast, and by the time for his lunch or midday dinner he will have an honest appetite again.—*British Medical Journal.*

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Some Facts about Castor-Oil.—The castor-oil plant (*Ricinus communis*) has risen to considerable importance of late years, seeing that the Indian commerce in its products now exceeds in value half a million sterling, exclusive of that of America, Italy, and other countries. Indigenous to Asia, where the shrub is perennial, different varieties are widely distributed over various parts of the world—in many of which it grows wild; and in others, as in India, North America, Egypt, and West Africa, it is cultivated as an agricultural crop. In the United States, especially in California, Kansas, Iowa, &c., it is largely grown, and the yield is from 20 to 25 bushels per acre. It is known under various names in different countries—such as "Palma Christi." In Brazil it is called "Mamona," and used for burning. In reference to the latter name, we may here recall the fact that some months ago a parcel of a "new oil" was placed for sale in Mincing Lane under the name of "Mamono oil." There was some interest taken in it at the time, but we stated that the oil was nothing more nor less than castor-oil. Since then the parcel has not been heard of. In the Portuguese colonies it is called "Carapatto," in Spanish America "Higuerilla," and in Venezuela "Tartago." The cultivation in the latter republic is carried on on an extensive scale near Caraccas; one variety with large seeds yielding there 40 to 45 per cent. of oil. In the United States the quantity of castor-oil made a few years ago was returned as 900,000 gallons, worth $800,000. At one works there—the Belleville Oil-works, of Messrs. Brosius & Son—the yield of cold-pressed oil per bushel after two expressions is 16 lbs., or 2 gallons: the first pressure yielding 12 lbs. of clear white oil, the second 4 lbs of yellowish. Sometimes a third expression is resorted to, but then the oil is much coloured, and the yield (1 to 3 lbs.) so very small that it hardly pays for the labour and expense incurred. The process of purifying and clarifying the oil is accomplished in various ways, and is the speciality of every factory. The great point in purification—as well as clarification—to be noticed is the fact not to expose the oil too long to the air, as it is then liable to become rancid. The seeds cold drawn yield about 25 per cent. of oil; if heated at the time of extraction they yield about 35 per cent. The cold-drawn oil is that used in medicine as a purgative, and the latter oil is used for burning and for lubrication. This oil is much used by the Jews for their Sabbath lamps, it being one of the five kinds of oil their traditions allow them to burn on such occasions. Problematical as it may seem, castor-oil in small quantities is used by some of the natives of India to give a flavour to their curries. Well may it be said as regards this use of the oil that there is no accounting for taste.—*Chemist and Druggist.*

Pure Air Indicator.—It is estimated that the air in a room becomes distinctly bad for health when its carbonic acid exceeds 1 part in 1,000. An apparatus has been recently patented by Prof. Wolpert, of Nurnberg, which affords a measure of the carbonic acid present. From a vessel containing a red liquid (soda solution with phenolphthalein) there comes every 100 seconds, through a siphon arrangement, a red drop on a prepared white thread about a foot and a half long, and trickles down this. Behind the thread is a scale beginning with "pure air" (up to 0·7 per 1,000) at the bottom, and ending above with "extremely bad" (4 to 7 per 1,000 and more). In pure air the drop continues red down to the bottom, but it loses its colour by the action of carbonic acid, and the sooner the more there is of that gas present.

rigid abstainers indulge, often immoderately, in pipe or cigar. Our author says that the contention that tobacco conduces to inebriety "is untenable." The drink of the smoking abstainer is coffee, which corrects the depression which may result from the use of the "divine weed." Of course, when a smoker leans upon alcohol as a corrective to the depressing effects of pipe or cigar, it is clear an inlet for the habit of inebriety is at once offered. As things are, however, the moderate use of tobacco cannot be credited with favouring drunkenness.

The point of much importance, we are glad to note, Dr. Kerr insists upon as a factor in the development of inebriety, is *insufficient or improper diet*. "The modern common feeding of tender children on bread and dripping with tea" has "not a little to answer for in the question of present-day British inebriety." The fact is that if the average Britisher could have his meals better cooked, and obtain greater variety in the matter of his *menu*, we should hear less of the increase of drunkenness. Temperance reformers may well take the hint Dr. Kerr gives them, and throw all their influence into the movement for promoting culinary instruction among the masses, and for dispelling the drink-craving by means of appetizing meals.

To the question of the *treatment* of inebriety, Dr. Kerr devotes, naturally, a large portion of his work. Herein he reflects largely the points of his own personal experience as a physician, and on this account what he has to say will become of primary interest, not only to the public, but to medical men themselves. He gives some amusing instances of so-called "panaceas" for the drink-craving. The Turkish Bath has figured as such a panacea; but Dr. Kerr naïvely remarks that the *bons vivants* take a bath "before making a night of it." If this is so, what is vaunted as a cure-all would only give a heavier zest to the orgie. Cocoa as a drink; alcoholic extract of frogs (!); raw beef; a vegetarian diet; the "bark" cure by means of red cinchona; and kola nut, are only a few of the nostrums which, from time to time, have figured as certain cures of inebriety.

What Dr. Kerr shows clearly is, that to cure a drunkard, we must study his case just as thoroughly as if he were suffering from, say epilepsy, or typhoid fever. We must take into account his history, family and personal, his mode of life, his occupation, his special temptations and dangers, the form of alcoholism he affects, and the phases of drunkenness he exhibits. His treatment must present a combination of medical, hygienic, mental, and moral agents. The idea of curing inebriety by giving bromide of potash or pouring gallons of red bark infusion into a drunkard's stomach, is a piece of treatment, as useless and futile as would be the administration of tea or coffee. Drugs at the best are only aids to cure; and, in reality, their part is that of alleviating or removing bodily ailments or conditions which may either be at the root of, or favour the inebriate-habit itself.

In respect of one point, Dr. Kerr gives valuable advice. The idea was formerly promulgated that it was a highly dangerous proceeding to withdraw alcohol suddenly and completely from the grasp of the drunkard. "Ample experience," says our author, "has shown that it is safe for the most confirmed alcoholic inebriate to at once and for ever abstain." The proof of this fact is found not merely in medical experience, but in the common observation that paupers and criminals, suddenly transported to workhouse or jail, do not succumb from the sudden and complete withdrawal of their potations. A very full account is given by Dr. Kerr of the medical treatment of inebriety, and physicians will do well to peruse his pages carefully, that they may be the better enabled to render help to the cases in which they are consulted. Stress is duly laid by our author on diet-rules, on attention to mental occupation, and on the duty of keeping the inebriate desirous to reform, well occupied both as to hands and head. The hygienic and moral treatment in truth appears to us to be that which really underlies and directs all other measures; although medical skill can do much to ward off collapse, and to favour that process of bodily recuperation which, in its turn, is the prelude to sound health.

The *medico-legal aspects* of inebriety are dealt with in the closing chapters of Dr. Kerr's book. The relations of the drunkard to the state and to the social fabric are naturally of high importance, and in this light, Dr. Kerr discusses them. As our readers know, the law jealously enough guards the personal rights of the drunkard, and refuses to place him in any licensed Home or Retreat, save under a voluntary declaration of his willingness to enter such an institution for a given period. Dr. Kerr gives full details regarding the mode of procedure which has to be observed in order to secure admission to a licensed Retreat, of which the Dalrymple Home at Rickmansworth, near London, is a typical example. It seems clear to us that, sooner or later, the law will require to take greater and closer cognizance of drunkenness than is now the case. Inebriety, as a factor in national decay, may well demand the attention of law-givers, as also, for example, may the question of the divorce of man and woman from the detestable bondage of a union which has been cursed by the confirmed drunkenness of either partner. Be this as it may, Dr. Kerr's book we can only regard as an epoch-making volume. It stands alone at present as a full, complete, and admirable exposition of the history and treatment of one of the most potent curses and diseases of modern social and physical life.

Invalid's Food. — Frequent discussions take place between professional and unprofessional nurses, and many minds debate the question as to what is suitable for a dyspeptic invalid, weakened by that too general complaint dyspepsia. A hint in this direction will therefore be of valuable service. When the stomach is so debilitated and the blood impoverished, few concoctions there are which the patient can enjoy and feel benefit from; one good recipe, therefore, will be enough to settle the question. It has not failed to promote the strength so much desired. Take of the white of two eggs, whisk or beat in a bowl until the whole is a mass of froth, add two dessertspoonfuls of Scott's Oat Flour, make into a creamy consistence with water, a pinch of salt, and two teaspoonfuls of brandy. Mix well and give to the patient; this can be repeated three times in the day until the patient is able to stand a change of diet.

Insect Pests.—Dr. J. A. Lintner, the well-known entomologist of New York, says there are in the world 320,000, species of insects, 25,000 of these belong to the United States, and about 25,000 preyed upon the productions of man; 7,000 or 8,000 of these could be considered as being fruit pests. On the apple alone 210 species are known, and probably more extended investigation will increase the number to 300. The future successful fruit grower should study entomology, and be acquainted with insects and their habits, so as to be able to tell friends from foes. Professor Lintner recommends the study of feeding and habits as a guide to the use of insecticides, which should also receive notice.

IMPORTANT ANNOUNCEMENT.

COMMENCEMENT OF A NEW VOLUME OF "HEALTH."

Health, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the Publisher, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain Health from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we take the opportunity afforded by the Commencement of a New Volume to offer the following Free Gifts and Bonuses to all who subscribe to Health for one year or longer, on and after Friday, April 6th, when the first number of Volume XI. will be issued :—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of Health, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of Health weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of Health so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of Health, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to Health, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with Health should be addressed directly to the Publisher, 2, Paternoster-square, London, E.C., and *not to the Editor*.

An important factor in vitiating the air of an apartment after dusk is the flame of a lamp or a jet of gaslight. The air, which is exhausted by one gas burner, is equal to the amount exhausted by three adults, so that the air of an apartment, ten feet square and ten feet high, is rendered unfit for breathing by one gas jet in 2¼ hours if a change of air be not duly provided for by sufficient ventilation.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

LETTERS TO THE EDITOR.

SMOKING AND THE EYESIGHT.

Sir,—It is clear your correspondent "Nerve," while writing doubtless with the best intentions, does not clearly distinguish between tobacco's use and its abuse. In quoting medical opinion, he does not apparently make it clear to us how much is original (*i.e.*, the actual words of the physician or surgeon), and how much represents his own composition and views. In respect of his opinions there is no question that "Nerve" is somewhat extreme. My own experience has been that tobacco amaurosis *only occurs in those who smoke to excess*, and at the same time heavily indulge in alcohol. I believe other surgeons who frequently see eye-cases have a similar experience. "Nerve" is correct in saying that tobacco amblyopia is accompanied by changes in the colour vision, but *this is confined to certain parts of the field of vision, and not to the nature of what we usually know as, and call, "colour-blindness."* I do not think he is correct in saying that toxic amblyopia is confined to smokers, inasmuch as cases have been recorded in which amblyopia or amaurosis has been ascribed to poisoning by lead, and also to quinine and salicylate of soda. The common-sense answer to his letter seems to be that it is a warning against the abuse of tobacco, not against its use. If no benefit were derivable from its moderate use, is it conceivable that its use would be so universal?—I am, yours, &c.,

A Surgeon.

TOBACCO AND EYESIGHT.

Sir,—I, in common, probably, with most of your readers, cannot avoid the conclusion that your correspondent "Nerve" is riding his "hobby" with extraordinary vigour. He seems to have conceived an intense objection to tobacco and tobacco smoking; and, in order to make, if possible, all those who read his statements accept his opinions, he is apparently doing his best to hunt up every conceivable fact upon which he can lay his hands, the recital of which would be calculated to favour his cause. But he is not particularly happy in his declamations. At the best he has only well-known medical facts to deal with, and these he attempts to dish up in a new fashion by quoting largely from second-hand opinions. A few weeks ago, he commenced his tirade by stating that tobacco was answerable for the development of cancer in the Emperor's throat, and this absurd contention was, I was glad to see, ably disposed of in the pages of Health by several medical correspondents. Then, having allowed this matter to rest, he begins anew on the subject of tobacco and the eyesight. Without knowing, apparently, anything about the subject, he makes a strenuous effort to draw conclusions from what he has read—and he seems to think that tobacco smoking is the cause of an incalculable amount of blindness. He quotes Jeaffreson upon the subject, and in the quotation the following sentence occurs: "The influence of tobacco in the production of colour-blindness is one of great practical importance." It is true that one of the symptoms of tobacco amblyopia is loss of colour-vision; but Jeaffreson, being an ophthalmic surgeon, must know that it is the failure of sight which forms the main trouble in these cases. It obviously matters not one jot what the colour of a lamp is, if the lamp cannot be seen. "Nerve," therefore, cannot, in this matter, be congratulated upon the evidence which he has produced in support of his case. With regard, however, to the subject upon which "Nerve" attempts to inform your readers, let me add that the latter need be in no apprehension about their pipes and cigars being stealthy and insidious foes. It is true that tobacco, in *some exceptional cases*, excites what has been called tobacco amblyopia. But the first thing a patient does when this is noticed to occur is, naturally, to seek advice of an ophthalmic surgeon, or attend at an ophthalmic hospital; and here the matter ends. The disease is brought at once under treatment, and the patient recovers. If, however, any of your readers should still have been impressed with "Nerve's" statements, it is only necessary for them to remember that, as far as tobacco amblyopia is concerned, the disease has only been observed in smokers of "shag and cavendish." Therefore

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S

WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* EXTREME NERVOUS DEBILITY.
24, Clayton-place, Markerend-road, Bradford, 9th April, 1888.
Dear Sir,—I cannot tell you how much good your treatment has done for my daughter, who was suffering severely from loss of voice, cramp, and general debility. Year after year she has suffered from these distressing complaints, and nothing did her any good, but after wearing your Galvanic Belt for two months she is now quite well, and better than she has ever been before. Everyone that knows her is greatly surprised, and thinks she is a living wonder. May God bless you in your efforts to relieve suffering mankind, and I cannot thank you too much.—Yours respectfully,
Mr. J. L. Pulvermacher, 194, Regent-street, W. EMMA HENSHAW.

GALVANISM *v.* ST. VITUS' DANCE.
34, Moon-street, Morice Town, Devonport, 5th April, 1888.
Dear Sir,—I feel it is my duty to send you a testimonial for the good I have obtained from your combined Band for St. Vitus' Dance.
Before I wore your appliance I could not walk across the room for fear of falling down, but I began to get better from the first day I wore your Belt, and now I am perfectly well and able to return to my work.—Yours truly,
Mr. Pulvermacher, 194, Regent-street, W. J. TAYLOR.

GALVANISM *v.* RHEUMATISM.
Mansfield, Reading, March 30th, 1888.
Dear Sir,—I am thankful to tell you that I have derived great benefit from your Galvanic Belt. After wearing it twenty-four hours I was able to walk; and now, at the end of six weeks, I am quite cured of inflammatory Rheumatism.—Very faithfully yours, (Rev.) G. IBBERSON TUBBS,
St. Mary's, Reading.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* STOMACH WEAKNESS.
St. Thomas's Hospital, Westminster, S.W., 26th March, 1888.
Dear Sir,—I have much pleasure in informing you that I lent my Galvanic Belt to a fellow-patient for a few days and nights, and it has acted like magic in giving him relief from severe stomach trouble.
The poor man desires to be grateful to you for the benefit received, and has purchased the Belt.
You are welcome to use this letter.—Yours respectfully, J. BARRETT.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
Hull, 24th March, 1888.
Dear Sirs,—I have the pleasure to inform you that the Galvanic Belt which I purchased from you last November has made a complete cure in my case.
I was suffering from nervous exhaustion, and had tried several patent medicines without any success.
Your appliance is truly a wonder, and I am convinced from my own experience that any one who is suffering from loss of vital energy may be speedily cured by giving your Galvanic Belt a fair trial.—Yours truly,
Messrs. Pulvermacher & Co., 194, Regent-street, W. C. MOON.

GALVANISM *v.* LUMBAGO.
Winlaton, Blaydon-on-Tyne, 23rd March, 1888.
Dear Sir,—I am pleased to inform you that your Combined Belt quite cured my lumbago in a few days, and I shall have much pleasure in recommending your Belts among my friends and neighbours.—Yours truly,
Mr. Pulvermacher, 194, Regent-street, W. T. ARMSTRONG.

GALVANISM *v.* LUMBAGO and RHEUMATISM.
171, Portobello-road, Notting-hill, W., March 14, 1888.
Dear Sir,—A lady friend of mine, somewhat advanced in years, having suffered severely from lumbago and weakness in the back, was unable to walk without the aid of a stick.
I allowed her the use of my Pulvermacher Battery, for a few weeks, and she is now able to walk without pain or trouble, and is looking healthy and well.—Yours faithfully, W. GRAINGER.
Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

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GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

no shag, no tobacco amblyopia; plenty of birds' eye, and other similar varieties, plenty of smoking, and friends both of pipes and men as before.—Yours, &c., AN EYE-SURGEON.

P.S.—It should be added that shag only causes poisonous symptoms when smoked to excess—as, for instance, half an ounce daily.

WHAT AN EYE-SURGEON SAYS ABOUT TOBACCO AND THE EYESIGHT.

SIR,—It would be interesting to learn who the somewhat erratic but anonymous genius is who, under the name of "Nerve," persists in sending letters to HEALTH, and to other journals, on tobacco and its theoretically injurious effects on the human health. You inserted a previous communication of his on tobacco and cancer, and effectually disposed, in the replies that letter drew forth, of his false alarms. Now he comes to the front with another terror of tobacco, under the heading "Tobacco and Eyesight," and wishes to make the public believe that the use of tobacco induces an eye affection rejoicing in the somewhat terrifying name of *amblyopia*. Is "Nerve" simulating the *rôle* of King Jamie of goodly memory and inditing a new "Counterblast" against the fragrant weed? Or is "Nerve" an emissary of some anti-tobacco society (this is an age of anti's, it seems) which, failing to gain the public ear by ordinary means, thinks to stir up public alarm by aid of anonymous "frighteners." If so, let me assure "Nerve" his efforts are as vain as his science is deceitful. He has cried "wolf" once before, *re* the cancer and tobacco scare, and his second and present cry that tobacco causes blindness is likely to aid his first expostulation in effectually discrediting any further statements which may emanate from his pen. I am not concerned with refuting the medical statements he quotes. All I can say is that I should feel personally grateful to "Nerve" if he will inform me whether or not what is known as tobacco amblyopia is not curable by a simple renunciation of the weed, and whether or not this trouble as a rule is caused only by grossly excessive indulgence in smoking. Again, for his statement that true colour blindness is caused by tobacco *per se*—he says tobacco-influence is "of great practical importance" in the causation of this affection—I fail to find one scrap of evidence in medical literature. In connection with this tobacco scare, it may be interesting to hear the testimony of Mr. R. Brudenell Carter, the famous eye-surgeon, on the point. Mr. Carter, in his volume on "Eyesight: Good and Bad" (Macmillan, 1880. Fourth edition), p. 230, says:—"Beer expressed the opinion, more than sixty years ago, that smoking in youth, on account of the frequent loss of appetite which it occasioned, was often a cause of permanent weakness of sight; and the same notion was again promulgated in a somewhat different form, about eighteen years ago, when an attempt was made to trace atrophy, or wasting of the optic nerves, to the use of tobacco. Concerning this doctrine, I will say no more than that it appears to me not only to be not proven, but even to be opposed to facts about which no doubt can be entertained." (Strong language this for "Nerve" to combat.) "The consumption of tobacco," continues Mr. Carter, "has increased enormously in this country within the last twenty years, particularly among boys; and I at least have not observed such a corresponding increase in the prevalence of nerve-atrophy, as there should have been if the belief of its dependence upon tobacco were well founded. In saying this, I speak quite without being influenced by any partiality for smoking, seeing that I do not practise it, and that tobacco, in all its forms, is rather distasteful to me than otherwise." "Nerve" may find it a task beyond his powers to controvert Mr. Carter's words. No one defends the abuse of tobacco; but when a writer like "Nerve" seeks to bolster up an absurd prejudice against smoking by misstatements and absurdities, aided by garbled medical opinions, I really think the press should refuse to pander to such a dubious method of missionary enterprise.—I am, sir, yours, &c.,

COMMON SENSE.

TOBACCO AND EYESIGHT.

SIR,—The letter written by "Nerve" in the last number of HEALTH is not accurate, because he seems to think that the defect known as colour-blindness is entirely caused by tobacco. It is well known, however, that the vast number of those people who are colour-blind have had the defect from birth, and that, in consequence, tobacco has had nothing to do with its causation. In certain cases, also, colour-blindness is caused by disease of the optic nerve, and in other cases by some affection of the visual centre in the brain, as in hysterical amblyopia, and without any connection whatsoever with tobacco. In *tobacco amblyopia* the defect of sight is more or less limited to the central part of the field of vision, and the affected area is found to be somewhat colour-blind for red and green, but this loss of colour-perception is usually incomplete, and will often escape detection if large colour tests are used. On examining the eye with the ophthalmoscope, pathological changes are usually absent, and are at all times

difficult of detection. In severe cases the part of the disc next the yellow spot becomes pale, and atrophies, and there is reason to believe that this change is caused by a chronic inflammation of the central bundles of the optic nerve. "Nerve," however, seems to be entirely ignorant of the fact that marked cases of optic *axial* neuritis are only found in association with the disease known as diabetes, and that a typical case in connection with tobacco amblyobia has never yet been actually demonstrated by the miscroscope, although we have reason to believe this axial neuritis exists in severe cases. The disease, as "Nerve" has pointed out, occurs in males at or beyond middle life who have been heavy smokers for many years. He, however, does not sufficiently point out *that, associated with the intemperance in tobacco, there has usually been intemperance in alcohol, and probably at the same time exhaustion, anxiety, under-feeding, and dissipation.*

If the patient comes soon enough under treatment, absolute cessation from tobacco, with improvement in his surroundings and mode of life, will cure him without the administration of any drug. The tobacco, however, has merely been the exciting cause; and it is probable that if the patient had been in good health the tobacco poison would have produced no evil effect. The picture drawn by "Nerve" is overstrained, and must therefore be taken with all reserve.—I am, yours, &c. MEDICUS.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

AERONAUT.—The number of HEALTH in which the review appeared was No. 79, not 59. The latter number must have been named or printed in error. The publisher of the work is H. Grevell, London.

FLORENCE.—Your symptoms are fully accounted for by your age, and also by the fact of your having undergone much mental worry. Take as much rest as possible, and avoid excitement. The juice of lemons should be taken frequently by you in water, if they do not derange digestion; or try an antipyrin tabloid (five grains) in water every three hours, taking no more than three tabloids per day. The tabloids are made by Burroughs, Wellcome & Co., Snow-hill, London, E.C. If not bettered, write again.

BLUSHING.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.) for full information. You have no need to be alarmed.

B. C. W.—Why not exercise your strength of mind and shake off the feeling? Try the effect of a tonic, such as Syrup of the Hypophosphites: a teaspoonful in a wine-glass of water after meals twice daily. These feelings often arise from lowness of the system or mental worry.

F. C.—Rest after your meals and do not read or study too soon after food. Avoid food for at least two hours before bedtime. Take Dahl's Cakes (advertised in our pages) as a remedy for constipation; possibly if you took a little stout or Bokõl to dinner each day you would benefit therefrom, and a tepid sponge bath each morning would also do you good.

X. Y. Z.—You are possibly right in your interpretation of the cause of your ailment. In one or two cases of like nature as yours benefit was derived from taking one aloes and iron pill occasionally at bedtime, and by sponging the body night and morning with tepid water, to which a little Hazeline was added. Try these measures. Change your underclothing frequently; wear Ward's woollen garments, and try a Turkish Bath now and again. If these measures fail, write again.

T. BROWN.—Try the Geddes Hemlock Bark Extract as an application. It is invaluable as a healing lotion.

EGERTON.—Try the effect of the following as a nutritive hair-application, and brush the hair night and morning thoroughly with a pair of very soft brushes; use no hard brushes or combs: Castor oil, four drachms; almond oil, twenty-eight drachms; glycerine, twelve drachms; rectified spirits, four drachms; Jockey Club perfume, eight drachms. Mix. Label: "Rub a little into the roots of the hair each morning."

ALFONSO.—Read the pamphlet "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.); attend carefully to what is there said regarding diet and the use of tonics.

NORAH S.—1. No ill-effects, certainly; but, provided a person is healthy, there can be no gain in taking saccharin in place of sugar. 2. We should not recommend it at all for jam-making; it would certainly be dearer than sugar, and less effective. 3. We agree with your views. If you will send us a "Letter to the Editor," embodying your views regarding the tight-lacing question, we shall be glad to give it a place in our columns.

TO THE READERS OF "HEALTH."

THE extraordinary statements of General W. F. Nuthall, Captain J. Paige, Rev. C. G. Squirrell, Rev. James Brierly, M.A., J.P., and other prominent men that have appeared in these columns in the past, have not only attracted much attention, but have awakened doubts in the minds of some as to their genuineness. They were, however, correct in every particular, as the following local statements amply confirm:—

244, Brockley-road, Brockley, S.E., Nov. 25, 1887.—I feel it my duty to write and thank you for the bottle of Warner's SAFE Cure which I was persuaded to try, suffering as I have done for so long a time from indigestion and other complaints caused by a sluggish liver and disease of the kidneys. I had tried nearly all the remedies advertised without any good effect, and I am grateful indeed to my friend who recommended me to try Warner's SAFE Cure, for after taking only one bottle, I can truly say that I was astonished at its quick efficacy: it took away all my pains, and I feel quite another being. I have, and you may depend shall continue, to press all my friends suffering from the liver and complaints of the kidneys to take that medicine. You can make what use you like of this letter, as I am grateful to you for producing such medicine, which gave me the relief I had been seeking without avail for so long a time, and I can only hope that all suffering from the complaints named will be induced to try it.
(Signed) J. PRIOR.

40, Haymerle-road, Peckham, London.—I have long been suffering with gravel, for which I have tried many remedies, but derived no special benefit. I also consulted a noted specialist for the bladsage of gravel, and resulting in stone in the bladder. Two years ago I was obliged to undergo an operation, and had a very large stone taken from me, which gave me temporary relief; but the gravel kept passing and accumulating as formerly, the pains in the region of the loins and back were frightful, and I wasted away to a mere shadow, having when in health weighed 11 stone. I could not find any permanent relief until I commenced taking "Warner's SAFE Cure," which was recommended to me. Under its use I soon began to pass stones, of which some ten to fifteen large ones have come away, with a large quantity of gravelly sediment. The pains ceased, and I began to gain flesh after the first bottle or two. I consider the change a miraculous one, and my doctor compliments me on the wonderful way I have recovered since taking the "Warner's SAFE Cure." My husband is so pleased with the good the medicine has effected in my case that he is recommending it to everyone he meets. ROSE PENDALL.

Statements like the foregoing are certainly conclusive evidence of the wonderful merits of this remarkable medicine. No better verification of its purity and power can well be asked. The above testimonials are not from unknown and obscure persons, residing in distant parts of the kingdom, but are the voluntary statements of neighbours and friends living in your own locality, the truth of whose assertions can be easily verified. Are not such proofs sufficient? We can show thousands of similar testimonials from people all over the world. Shake off prejudice! Use the favourite remedy—Warner's SAFE Cure—and enjoy health. For sale by all medicine vendors throughout the world, at 4s. 6d. per bottle, or can be had direct of H. H. WARNER, 86, Clerkenwell Road, London, E.C.

C. D——T.—Apply a little boracic ointment to the affected parts, and wash them night and morning with Bayley's Spermaceti Soap and tepid water.

PHŒBUS.—1. See advice given to "S. Durran" in HEALTH, No. 261. 2. Look to your teeth, and use Dr. Pierre's Eau Dentifrice as a mouth-wash, and his Tooth Powder for the cleansing of the teeth—see advertisement in our pages. 3. Have them extracted by a chiropodist. 4. Wash the feet night and morning, and dust a little of Woolley's Sanitary Rose Powder on them after washing. Change your socks frequently.

H. C.—Keep the hair short for a time, and use a soft brush only, and no small or hard combs. Use the lotion recommended to "Hairless" in HEALTH, No. 262. Wash the hair once a fortnight only with Bayley's Soap and tepid water (17, Cockspur-street, Pall-mall, London, S.W.).

NOSE.—Your last attack clearly arose from over-excessive strain on the bloodvessels in your diving experiments. We should advise you to limit such experiments in future, or to avoid them altogether. If bleeding from the nose occurs frequently, apart from your diving, you must look to your general health. Try a change of air, avoid over-exertion, and take a teaspoonful of Syrup of the Hypophosphites in a wineglass of water, thrice daily, after your meals.

HERBES.—The pamphlet you send is that of a well-known quack recently exposed in HEALTH. Read the pamphlet recommended to "Alfonso" in the present number, and follow the advice it

gives. Plenty of fresh air, plain diet, and the rousing of your mind to neglect your fancied ailment, are the means of your cure. You are in no sense ill, it is your morbid fancies and not your body which are at the root of your troubles.

R. M.—1. The falling out of your hair is not a result of the medicine but of the disease. Your hair will grow again after you have got rid of your ailment. 2. You must first be cured of the primary trouble of which you complain. 3. Use Hazeline as a lotion applied on lint either pure or diluted with water, and avoid constipation by the use of Dahl's Cakes (advertised in our pages) and a vegetable dietary. 4. You must not think of taking such a step until you are thoroughly cured, and this will not be for a year or two at least.

Easton's Syrup.—In reality there is no fixed rule; before food agrees with some, and after food with others. The medicine is given before food when it is specially intended to create an appetite.

O. K. E.—1. Try the Fer Bravais, and if this does not suffice, take the Syrup of the Hypophosphites—but be certain, first of all, that you need a tonic. 2. Difficulty of digestive action. 3. Are you serious in asking us the meaning of the word "tepid" as applied to water? If you desire to know the exact temperature of a tepid bath, it is one from 85 to 95 degrees Fahrenheit.

C. W. B.—The additional material renders Howie's Filter still more efficacious as a water-purifying appliance.

Thedham.—Try the effect of taking a five-grain tabloid of antipyrin (Burroughs, Wellcome & Co.'s, Snow-hill, London, E.C.) between your meals, once or twice daily, and note effects of this treatment on your ailment. Your druggist will procure a few of these tabloids for you. If not cured thereby, after, say, three days' trial of this remedy, write again.

Leven. — Note and follow advice to "Albert Frame" in last week's Health.

Juncus.—You should try an inhalation at bedtime made by adding a teaspoonful of Friar's Balsam to a pint of hot water, and take, after your food, a dessertspoonful of Scott's Pure Cod Oil Emulsion, twice daily. When you can take a holiday, go to a mild seaside (southern) resort. If not bettered, write again.

Subscriber (Bermuda). —We are glad to hear of the improvement in your condition. You might give Vichy Water a trial; or, when the smarting and irritation are present, try fifteen grains citrate of potash in half a tumbler of water twice daily between your meals.

C. H. C.—Avoid touching or irritating the part, and, above all, avoid removing any scar which may form. Apply to it, night and morning, a little boracic ointment, and this will probably heal it up.

Omega.—1. There is no reason why you should not continue to take either of the malt extracts you name, so long as you feel you require such an addition to your dietary. The oil you name is a first class brand, and may be taken along with the malt. 2. No; it is an error in diet to avoid fats, which are necessary for the assimilation of other foods.

J. T.—1. Ordinary paint is not poisonous. 2. The room should be well ventilated by fresh air and fires, and may be occupied safely enough after a few days when the smell of the paint has passed away. 3. Yes: oatmeal contains starch, though not in excessive amount. 4. In some cases the rhubarb is taken as a remedy against constipation. 5. Tea, probably.

Jupiter.—The mode of feeding you describe is often practised, but only in cases of extreme inanition. In your case, we should say there was no necessity for such a plan. Why not try the Kepler Cod Oil with Extract of Malt? This is a food which is assimilated by the most delicate stomachs. There is not much absorptive power possessed by the lower intestine, and you would find great difficulty in carrying out your ideas. Peptonized milk should contain enough fat in a way for your purpose. Use Fairchild's Peptonizing Powders.

L. Scott.—Try the antipyrin as prescribed above to "Thedham;" take one of the five-grain tabloids every two hours, until three tabloids (not more in one day) have been taken. If the headache ceases before three have been taken, discontinue the remedy, of course. Antipyrin is also sold as a powder, but the tabloids are to be preferred.

R. W.—Apply to any good surgical instrument makers, *e.g.*, Messrs. Krohne & Sesemann, Duke-street, Manchester-square, London, W., and they will advise you of the latest makes. Mr. Salt, 69, Corporation-street, Birmingham, supplies all kinds of medical appliances of the nature you name.

Victor.—Use the remedies recommended to "Juncus" in the present number; and, in addition, for the constipation, note advice given to "B. C." in last week's Health. Dahl's Cakes (advertised in our pages) will also do you good. Take more open-air exercise.

Cutaneous.—Try applying the ointment recommended to "Nox" in Health, No. 261. Live generously, and avoid chills. If not cured, write again.

Gussy.—Press out the blackheads with your fingers or a watch-key, then sponge the parts with Eau de Cologne or Toilet Vinegar. Your skin action is deficient. Take a hot bath twice a week at bedtime, and plenty of open-air exercise, and avoid excess of fatty foods. Read also article on Blackheads in Health, No. 199, to be had price 2½d., post free, from the Publisher.

E. L. D. D.—You may give Warner's "Safe" Cure a fair trial. It will probably cure your symptoms, and will in any case do no harm whatever. Report the result to us please.

J. S.—Rest after your meals as a necessary rule for health, and avoid excess of vegetable foods. Note also directions given to "Robina" in Health No. 262.

Sea Sickness.—Use the antipyrin tabloids made by Messrs. Burroughs, Wellcome, & Co., Snow Hill, London, E.C., to be had from any good druggist in your city. Each tabloid contains five grains of antipyrin.

L. A. P.—Read the pamphlet "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full information given therein.

John Graham.—1. Try fifteen drops Collis Browne's Chlorodyne in a little water when your symptoms trouble you, and repeat the dose in four hours if not relieved. 2. The appliances in question are worthless.

P. A. O. Farrell.—1. At first try five or six miles; you will easily be able to double this distance after you get accustomed to the tricycle. 2. About eight or ten miles; at six or seven miles an hour. 3. Increases appetite and food assimilation. 4. Yes. 5. Do not ride within two hours after dinner. Better to ride a short distance before breakfast, after a cup of milk and bread; and then take a longer ride after dinner.

Bronchis.—Follow advice given to "A. P." in Health No. 263. Inhale at bedtime. For description of "Pumiline" see Health No. 252.

Delta.—Rest rigidly after your meals, and thus avoid digestive disturbance. Avoid alcohol, and try Vichy Water occasionally.

Diamond.—Such symptoms as you name frequently arise from a disordered stomach, or from local irritation of teeth or gums.

AN IMPORTANT INVESTIGATION.

The *Dublin Irish Times*, having heard so much said both in the Irish and English press in favour of a wonderful Oil, they determined to investigate the matter themselves, by personal interviews with people who had used it, in order to learn whether or not one half that was said of its magical power was true, or whether it was one of those gigantic advertising schemes the magnitude of which in these modern times fairly takes one's breath away. Their representative interviewed a number of people in various parts of Ireland who had been cured by the application of the Oil, and in every instance he found that the published statements were true and correct in every particular, everywhere people were enthusiastic in its praise.

A Captain of the Royal Irish Fusiliers, who had suffered long from rheumatism and sprained ankle, said: "The effect after three applications of St. Jacobs Oil was simply marvellous; the pain at once departed, and has never returned."

A prominent hotel-proprietor, after suffering years from rheumatic gout, said: "It would be hard to conceive of anything working a cure so rapidly as St. Jacobs Oil did in my case."

A sergeant of the Royal Irish Constabulary told of a friend who had been a great sufferer for four years with rheumatism in the back, suffering great pain, using two bottles of St. Jacobs Oil, the pain entirely disappeared and has never returned.

A young woman in Castlebar told the reporter of the almost miraculous cure which her mother, aged 79 years, had experienced from using the invaluable St. Jacobs Oil. She had been almost helpless for two years from rheumatism, and was completely cured by using less than one bottle of the Oil.

A prominent surgeon of Tipperary related the case of a parish priest, who had for a long time suffered the most intense agony from sciatica, completely cured in three days by rubbing himself well with St. Jacobs Oil.

A very enthusiastic Irishman in Gort was met with shouting, "Long live St. Jacobs Oil." He had suffered the most intense rheumatic pains for years, and was cured by using the contents of one bottle of the Oil.

A cooper in Beale, County Kerry, Ireland, related how his knee was twice its natural size, stiff, and painful, and he was unable to stand. Swelling and pain entirely disappeared after using St. Jacobs Oil one week.

An old gentleman in Mallow cured in one week, after having commenced to use St. Jacobs Oil, of severe rheumatism of six years' standing.

On returning to Dublin, the reporter called on some of the leading chemists, for the purpose of learning their views. Messrs. R. Simpson & Co., of 16, Henry-street, the well-known chemists, stated that St. Jacobs Oil was the most popular remedy now being sold; that it is no uncommon thing for them to sell 1,200 bottles of the Oil in a single week. That their last order was for 600 dozen, or 7,200 bottles; and you can rest assured, said Mr. Simpson, the senior partner, that no medicine would have this enormous sale unless it possessed actual merit.—[2308.]

Look to your food and your teeth. Use Dr. Pierre's Eau Dentifrice regularly after food as a mouth-wash, and brush the teeth night and morning with Dr. Pierre's Tooth Powder.

LATE. — Dry the ear out with a little cotton wool, and have blown into it gently, night and morning, a little very finely-powdered boracic acid. Brace up your system by taking a teaspoonful of Syrup of the Hypophosphites, in a wineglass of water, twice daily after meals. Avoid colds and chills especially. If these simple measures do not cure you, consult an ear surgeon in Edinburgh or Glasgow. We can send addresses of such, if desired, on receipt of stamped addressed envelope.

EDWARD KING.—A book which will give you the information you seek is "Our Homes, and How to Make Them Healthy," published by Cassell & Co. Dr. A. Wilson's "Manual of Health Science" (Longmans) may also suit you.

A. BROWN. — Use the following lotion, which is to be sponged over the head once or twice daily where the ringworm patches exist:—Strong acetic acid, half an ounce; glycerine, two drachms; carbolic acid, half a drachm; elder-flower water, three ounces; rose water, to six ounces. Label: "For outside use only." If the ringworm spots are on the body, paint them with ink, or with tincture of iodine.

PETER F.—A hair lotion adapted to promote growth is made as follows:—Tincture of nux vomica, three drachms; distilled vinegar, two and a half ounces; tincture of capsicum, one drachm; tincture of cantharides, six drachms; spirits of rosemary, one ounce; rose water to make up six ounces. Rub a little into the roots of the hair each morning.

ANDREW G.—Give up all alcohol, and drink Vichy Water regularly as a beverage. Your food should be of very simple character; use Scott's Oat Flour; avoid salt meats, pastry, cheese, and like indigestibles. After your meals take fifteen drops Fer Bravais, thrice daily, and take a hot hip bath at bedtime occasionally.

P. HILL.—We prefer woollen underclothing as likely to be the more healthy in every respect; but there can be no objection to the silk vests, always provided you take care to clothe sufficiently warmly otherwise. The greater safety, however, is in wearing wool, such as that made by Ward & Co., Bradford.

PIX. — Try washing the hands with Bayley's Soap and tepid water, and use thereafter a dusting-powder composed of powdered oxide of zinc, one ounce; powdered camphor, one drachm; and starch, two ounces. Mix. Label: "The Dusting-Powder, for external use only." Avoid damp and chills.

C. A. G.—To unite iron with cod oil, the following is a method: —Syrup of the iodide of iron, three drachms; mucilage of acacia, one ounce; cod liver oil, to make up six ounces. Mix. A dessertspoonful may be given after food, twice or thrice daily.

LOMOND.—Try the effect of taking a pill composed of two grains sulphate of quinine an hour before dinner, daily. Apply Tidman's Sea Salt, heated, dry, in a flannel bag or stocking, to the shoulders when the pain is severe, and bathe the parts each morning in a strong solution of salt and tepid water, using brisk friction with a Wilson's Hygienic Towel thereafter.

B. A.—Attend to the under-noted directions:—Take no food for eight hours; then in the evening take the following draught: —Extract of male fern, thirty minims; powdered gum acacia, one drachm; peppermint water, one ounce; make an emulsion. Next morning take a full dose of castor oil, and about mid-day a large plate of mashed potatoes. The minute head of the worm is the part which requires to be brought away. Repeat the treatment if symptoms of the worm should show themselves at a subsequent period.

E. Y.—For the teeth and gums use Dr. Pierre's Eau Dentifrice and Tooth Powder. The use of these preparations will arrest decay of the teeth. Brush the teeth and wash the mouth morning and night.

ORANGEMAN.—We only send address of physicians and surgeons on receipt of stamped addressed envelope. Send such, and we will forward the address you require.

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Debility, Rheumatism, Gout, Sciatica, Torpid Liver, Kidney Disorders, and every form of weakness may be speedily cured by wearing

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TO MAKE A GOOD PLAIN CAKE.—Mix well together one pound of flour, a full teaspoonful of Borwick's Gold Medal Baking Powder, a little salt and spice, and a quarter of a pound of sugar, rub in a quarter of a pound of butter, add 6 ozs. of sultanas, 2 ozs. currants, and 1 oz. candied peel, moisten the whole with two eggs and half a teacupful of milk previously beaten together, bake in a quick oven very thoroughly.

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"Bonn, Jan. 23, 1887."

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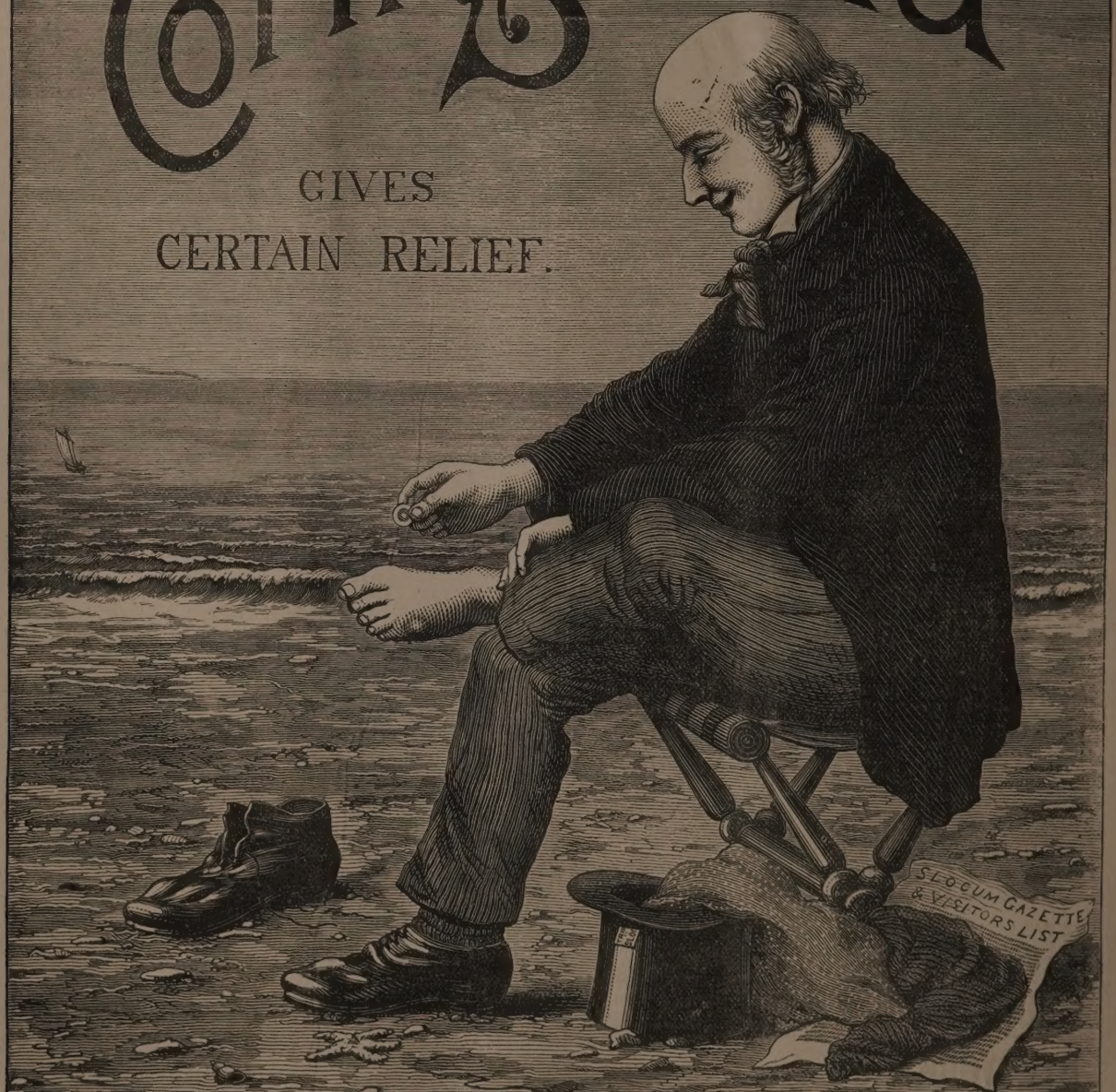

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